

***Fallugia paradoxa* (D. Don) Endl. ex Torr.**
ROSACEAE

Apache-plume

Synonyms: *Sieversia paradoxa* D. Don.
Geum cercocarpoides DC. ex Ser.



Drawing source: USDA-Forest Service Collection, Hunt Institute

General Description.—*Fallugia paradoxa*, commonly called “Apache-plume,” is an evergreen shrub that grows up to 2.5 m tall (Stubbendieck and others 1993, Cronquist and others 1997). It is often referred to as “semi-evergreen.” In the north part of its range, seedlings are deciduous (Meyer 1974). However, the term “semi-evergreen” may be applied because the leaves take on a bronze color during some times of the year. The leaves are alternate, somewhat fascicled, 0.8 to 1.5 cm long and have three to seven deep, narrow lobes. The bark on young twigs is white, or light-colored, and hairy (villous). The bark becomes darker, hairless (glabrous), and shreddy, exfoliating in flakes, as it gets older. The showy, flowers have five white petals. There are numerous fruits (achenes) in each head. Each achene is tipped by a 2.5 to 5 cm long feathery, densely hairy, tail-like style that makes the plants appear as if they have pom-poms on the end of each stalk during the fruiting

period. The length of the flowering period varies depending upon geographic location and elevation. It flowers in June through August in all parts of its range but flowering is extended from May to December in Texas (Powell 1998) and from April to October in Arizona and New Mexico (Epple 1995, Martin and Hutchins 1980). The common name for *Fallugia paradoxa*, Apache-plume, was coined because the feathery seed clusters look like Indian feather headdresses (Elmore 1976). Other common names include poñil, fallugie (Dayton 1931), feather rose, and feather duster bush (Epple 1995). *Fallugia* is a monotypic genus, that is, a genus of a single species (Cronquist and others 1997). In addition, Apache-plume shows minimal genetic variation throughout its wide range (Jones and Johnson, 1998). Hybrids between Apache-plume and cliffrose (*Purshia mexicana* (D. Don) Henrickson) have been reported (Blauer and others 1975, McArthur and others 1977).

Range.—Apache-plume occurs in western Texas, Oklahoma, New Mexico, Arizona, southern Colorado, south and central Utah, Nevada, and southern California in the U.S.A. (USDA PLANTS database 2002, Baldwin and others 2002, McGregor and other 1986, Vines 1986). In Mexico it occurs in Coahuila, Chihuahua, and Durango (Powell 1998).

Ecology.—Apache-plume generally grows at elevations between 915 and 2,430 m, but in northern New Mexico it has been found as high as 2,700 m (Dick-Peddie 1993). It grows on mesas and rocky hillsides in montane shrubland, grassland, pinyon-juniper woodland, and yellow pine in a variety of alluvial and gravel soils (Tidestrom and Kittell 1941, Dick-Peddie 1993, Powell 1998, Baldwin and others 2002). It is especially abundant along dry margins of water-courses and arroyos (author personal observation, Powell 1998). Dick-Peddie (1993) described it as a “semi-riparian” species because it tends to colonize microhabitats, such as run-off catchments and seep areas, which contain more available moisture than the surrounding area. Apache-plume is relatively drought tolerant and requires 20 to 50 cm of annual precipitation (Hayward 1990). It is tolerant of weakly saline and neutral to moderately basic soils

(McWilliams 2000). Endomycorrhizae were associated with Apache-plume in New Mexico (Williams and Aldon 1976).

Reproduction.—Apache-plume reproduces sexually by seed and vegetatively by sprouts (suckers) from the roots. The feather-tailed seeds are probably primarily wind dispersed. Apache-plume seeds apparently have no dormant period (Baskin and Baskin 2001). They are small and average approximately 925,932 per kg (Vines 1986).

Growth and Management.—Seed can be sown by broadcasting it on a prepared bed and covered by approximately 5 mm of fine loam or sand. Germination rate is from 19 to 65 percent (Vines 1986). In pots, the germination rate is 30 to 40 percent, but seedlings are reported to damp off easily and require adequate air circulation (Hayward 1990). A 4-litre plant is fully established and ready for sale in 18 months for the landscape market (Hayward 1990). Plants can also be grown fairly easily from root cuttings. It is closely grazed on overstocked range and, although tolerant of grazing with “excellent recuperative powers,” it is also reported to decrease under grazing pressure (Dayton 1931, McGregor and others 1986). Availability of adequate moisture may be an important factor in the degree of recovery. Apache-plume sprouts after fire (Shaw and Monson 1983, McWilliams 2000). In a pinyon juniper community it was reported to tolerate fire well (Aro 1971).

Benefits.—Apache-plume is valuable for erosion control (Dayton 1931, Stubbendieck and others 1993, Vines 1986). Its long roots provide effective soil stabilization especially in arid situations (McWilliams 2000). Apache-plume is important winter range for livestock (Dayton 1931, McGregor and others 1986, Stubbendieck and others 1993, USDAFS 1988). It is reported to have only a fair palatability for sheep, goats and cattle but closely cropped, stunted plants have been cited as evidence of high palatability (Dayton 1931, McGregor and others 1986, Stubbendieck and others 1993, Warnock 1974). It also furnishes important browse for some species of wildlife (Dayton 1931, Stubbendieck and others 1993) and makes up 1 percent to 5 percent of desert mule deer diet (Krausman and others 1997). Time of year, environmental conditions, and availability of alternate browse appears to influence palatability and use. It provides cover for a variety of small mammals and birds (Haywood 1990, McWilliams 2000). It was used for arrow shafts and brooms by many Native American peoples (Dunmire and Tierney 1995, Moerman 1998). Apache-plume brooms are

specifically kept inside some Sandia Pueblo houses because there is a belief that the brooms exert a positive spiritual effect on the household (Dunmire and Tierney 1995). The long roots were used as cord to tie fencing and make ramadas (Dunmire and Tierney 1995, Moerman 1998). An infusion of leaves was used as a shampoo and hair growth stimulant by some Native American tribes, and petals are reported to prevent stomach gas (Dunmire and Tierney 1995, Moerman 1998). One tribe used it in witchcraft to cause “insanity” (Moerman 1998). Shrubs are attractive as ornamentals and are popularly used for landscaping (Hayward 1990, Phillips 1987, Morrow 1995).

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